Improvements to Labour Force estimation method

Information on upcoming improvements to how Labour Force Estimates are calculated.

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As part of ongoing improvements to the estimation method for Labour Force statistics, in the February 2024 release on 21 March 2024, the ABS will be implementing some minor changes in how it accounts for some relatively small population groups within the sample.

There are various small groups within the Labour Force Survey sample, which together account for less than 2 per cent of the overall sample, who are more difficult to survey each month, contribute a higher degree of underlying sampling variability and other measurement error, and for whom there is reliable auxiliary data sources (e.g. regular administrative data). This includes some people who don't live in private dwellings (e.g. people in prison, living in aged care homes, etc) and some people who live in remote and very remote parts of Australia.

Many, but not all, of these groups have a higher proportion of people who are not in the labour force. Any improvement in estimating their contribution within the sample will

therefore result in an improvement in the aggregate estimate of persons not in the labour force and the participation rate, along with corresponding changes to the employed and unemployed estimates (but generally making little difference to the unemployment rate).

Making greater use of auxiliary data sources

The use of auxiliary data sources in Labour Force statistics coincides with an increasing shift towards multi-source and mixed-method approaches within ABS statistics and those of other national statistical organisations, given the breadth of data and methods which are now available.

The improved estimation model for Labour Force statistics will draw on a range of ABS directly collected data (including some Census data) along with administrative data sources (e.g. counts of prisoners, counts of aged care residents, etc), for some sub-population groups.

Using a range of auxiliary data sources has the dual benefits of using existing information that provide a reliable ongoing measure of the contribution for some sub-population groups that can work in concert with the rest of the Labour Force Survey sample, while also reducing the reporting burden on some of these groups. For example, not collecting survey data from prison populations, given there are already regular and more systematic administrative reporting activities.

Modelling method

The method to estimate a monthly contribution for these small population groups uses auxiliary data sources from the range of auxiliary datasets, in conjunction with the Labour Force Survey sample. This improves the contribution for less than 2 per cent of the sample, while more than 98 per cent of the sample will continue to reflect the survey data collected in the month.

The modelling method involves using the data to estimate individual unit contributions to the sample, which are then calibrated to independent population-specific benchmarks, which in turn then feed into existing weighting methods (along with most of the Labour Force Survey sample) to create more timely and representative estimates of the Australian population.

Impact on estimates

ABS analysis has shown that the new estimation model, by drawing on a more

representative and stable contribution for these groups from auxiliary data, can produce better estimates in Labour Force statistics, with reduced variability.

In addition to providing a robust foundation for future estimation, ABS analysis has also shown that the new method also delivers a discernible improvement during the pandemic period, when some of these population groups were more difficult to enumerate, as well as the period leading into the pandemic.

While not specifically a change designed and developed in response to the COVID-19 pandemic, the new estimation model better accounts for minor residual amounts of non-response bias for some of these groups of people during the pandemic, compared with the existing methodology. Beyond this, it also addresses increasing levels and variation in non-response for these groups related to factors such as weather events and natural disasters, business pressures affecting the availability of non-private dwelling contacts and administrators, among other factors, which have been increasingly observed since 2018. The ABS will therefore implement the improved estimation method for February 2024, but also apply it to estimates going back to August 2016.

This change in the estimation model results in a small improvement in the quality of estimates, but with minimal effect on headline Labour Force level estimates and the change they show in the labour market over time.

As a result of the change, the number of employed people in November 2023, in original terms, is expected to be revised down slightly, by around 0.4 per cent (around 60,000 people), with the number of unemployed people revised up by 0.4 per cent (around 2,000 people) and the number of people not in the labour force revised up by 0.8 per cent (around 58,000 people).

Revisions to the key measures will vary but will generally be relatively small at the national level.

The participation rate and employment to population ratio will both generally be 0.2 to 0.3 percentage points lower since the start of the pandemic, and around 0.1 to 0.2 percentage points lower before that, back to late 2016.

Similarly, total hours worked will also be around 0.2 to 0.3 per cent lower in recent years, and around 0.1 to 0.2 per cent lower in the years prior to the pandemic.

Revisions to the unemployment and underemployment rates will generally not be discernible in rounded terms, and less than 0.1 percentage point.

At the state and territory level, the changes are relatively similar to the national level in most instances – with the extent of revisions lowest in Victoria and highest in the Northern

Territory.

Timing of Change

To ensure the least disruption from revisions to users of Labour Force statistics, these minor estimation changes are being implemented at the same time as the quarterly population rebenchmarking process (and its related revisions) in February 2024 (released on 21 March 2024).

In making these changes, the estimation method will be implemented back to 2016, to bring it in line with revisions related to the major five-yearly population rebenchmarking.

The above summary of expected revisions provides an indication of the changes resulting from the estimation changes, as opposed to the regular quarterly rebenchmarking, for users interested in decomposing the contribution of revisions.

Impact on other ABS releases

The improved estimation method and the rebenchmarking process, and their resulting revisions to Labour Force statistics, will be reflected in all releases that use these statistics as an input (e.g. the Labour Account) or as a source of calibration for weighting and estimation (e.g. supplementary survey data, such as Participation, Job Search and Mobility, and Characteristics of Employment).

Information on how the improved method will be reflected in the Longitudinal Labour Force microdata will also be included in the next release.

Ongoing review and exploration of improvements

The ABS will monitor the performance of this new method as part of its regular quality assurance processes for Labour Force statistics.

There will also be further exploration of potential auxiliary data sources and methods, as part of the regular annual review program (as the ABS has also historically done for its seasonal adjustment and time series methods).